

**ABSTRACT OF THE DISCLOSURE**

A technique for allowing lightweight cooperative multitasking to be used as if it were pre-emptive multitasking, in a fashion that is transparent to the development process. The technique accepts a long-running  
5 program which it then transforms into a co-operative multitasking program that yields the processor after a small amount of time has elapsed. This technique imposes a small overhead on the transformed long-running program, but no overhead on the original co-operative multitasking program.  
10 This contrasts strongly with the usual case in pre-emptive multitasking, which imposes its overhead on all processes in the system. The transformed long-running program can be throttled either statically or dynamically in response to changing conditions. This technology is designed to be  
15 compatible with a variety of approaches to co-operative multitasking asynchronous message-passing systems.